

BEFORE THE  
Federal Communications Commission  
WASHINGTON, D.C.

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
 )  
Implementations of Sections of )  
the Cable Television Consumer )  
Protection and Competition Act )  
of 1992 )  
 )  
Rate Regulation )

MM Docket No. 92-266 /

COMMENTS OF GENERAL INSTRUMENT CORPORATION IN SUPPORT OF  
PETITIONS FOR RECONSIDERATION AND/OR CLARIFICATION

Quincy Rodgers  
Associate General Counsel  
General Instrument Corporation  
1899 L Street, N.W., 5th Floor  
Washington, D.C. 20036

Jeffrey Krauss  
Consultant  
17 West Jefferson Street  
Suite 106  
Rockville, M.D. 20850

Of Counsel

Willkie Farr & Gallagher  
Three Lafayette Centre  
1155 21st Street, N.W.  
Suite 600  
Washington, D.C. 20036-3384

Its Attorneys

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## SUMMARY

By attempting to clamp pervasive rate regulation on virtually all cable terminal equipment, the Commission has ignored the fundamental interdependence between cable equipment and service pricing with potentially baleful consequences.

Not only is the Commission's overly broad equipment regulatory scheme contrary to the plain meaning of the 1992 Cable Act and its legislative history, but it is also fundamentally at odds with principles of sound public policy and economic efficiency. The Commission's pervasive scheme could have the deleterious effects of stifling the technological dynamism of the cable industry and creating substantial inefficiencies in the design and deployment of highly innovative, handheld remote controls and set-top boxes that incorporate interactive, multimedia computer-based capabilities.

To avoid these untoward results, the Commission should exempt from regulation these advanced remotes and set-top boxes, regardless of whether such equipment is used in some way to receive basic tier service. In addition, the Commission should afford cable operators maximum flexibility to develop and implement pricing policies that will result in the most efficient, widespread deployment of this advanced equipment. Only through the ubiquitous deployment of these emerging technologies will Congress' vision of a dynamic, fully competitive marketplace of innovative service offerings be achieved.

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equipment and technologies for the cable television and home satellite television markets.

GI pioneered the development of digital video compression technologies and is currently supplying equipment incorporating these technologies to the satellite programming industry. GI plans to begin supplying digital video compression equipment to

In the Rate Order, the Commission decided to regulate all cable terminal equipment used to receive basic tier service under an actual-cost standard, regardless of whether such equipment is additionally used to receive other tiers of regulated programming or unregulated service and irrespective of whether the equipment's primary function is the receipt of services other than basic tier service.<sup>2</sup> Because this decision undermines Congressional intent and is fundamentally at odds with principles of sound public policy and economic efficiency, GI joins those petitioners who have urged the Commission to reconsider this pervasive equipment regulatory scheme.<sup>3</sup>

I. THE COMMISSION'S COMPREHENSIVE EQUIPMENT REGULATORY SCHEME CONTRAVENES THE 1992 CABLE ACT AND ITS LEGISLATIVE HISTORY

The Commission's decision to give the term "used to receive basic tier service" an "expansive reading"<sup>4</sup> is fundamentally at odds with both the plain meaning of the 1992 Cable Act and its legislative history.

Section 3(b) of the Act, entitled "Establishment of Basic Service Tier Rate Regulation," regulates solely the basic service

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<sup>2</sup> Id. at ¶ 283.

<sup>3</sup> See, e.g., Petition of Continental Cablevision, Inc. at 15-17; Petition of the National Cable Television Association, at 24-27; Petition of Newhouse Broadcasting Corporation, at 15-18; Petition of Time Warner Entertainment Company, L.P., at 16-21.

<sup>4</sup> See Rate Order at ¶ 283.

tier. Section 3(b)(3) directs the Commission to include in such regulations

[s]tandards to establish, on the basis of actual cost, the price or rate for...installation and lease of the equipment used by subscribers to receive the basic service tier, including a converter box and a remote control unit....<sup>5</sup>

Section 3(c) of the Act governs the regulation of any "cable programming service," which is defined as

[a]ny video programming provided over a cable system, regardless of service tier, including installation or rental of equipment used for receipt of such video programming, other than (A) video programming carried on the basic service tier, and (B) video programming offered on a per channel or per program basis.<sup>6</sup>

Under the plain meaning of Section 3(b)(3), converter boxes and remotes which are used solely to receive basic tier service are subject to cost-based price regulation. Conversely, because the definition of cable programming services includes within its ambit "[e]quipment used for receipt..." of such services, such equipment is regulated under Section 3(c), not the actual-cost standard of Section 3(b). This is true whether the equipment involved is (1) used solely to receive cable programming services, or (2) is also used to receive the basic service tier.

The legislative history of the 1992 Act supports this conclusion as well. S.12 defined cable programming service as:

[a]ll video programming services, including installation or rental of equipment not used for the receipt of basic cable service, regardless of

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<sup>5</sup> 1992 Cable Act § 3(b)(3)(A), 47 U.S.C. 543(b)(3)(A).

<sup>6</sup> Id. § 3(1)(2), 47 U.S.C. 543(1)(2) (emphasis added).

service tier, offered over a cable system except basic cable service and those services offered on a per channel or per program basis.<sup>7</sup>

H.R. 4850 contained the following definition of cable programming service:

The term 'cable programming service' means any video programming provided over a cable system, regardless of service tier, other than (A) video programming carried on the basic service tier, and (B) video programming offered on a per channel or per program basis.<sup>8</sup>

The Conference Report adopted the House language but amended



and consequently subject to cost-based regulation under Section 3(b).

But Congress did not adopt the Senate equipment language quoted above. Instead, the conferees adopted different language and crafted a different test -- whether the equipment in question is "used for receipt" of cable programming services. Thus, equipment used by subscribers to receive cable programming service remains exempt from cost-based rate regulation by operation of Sections 3(1)(2) and 3(c).

This intent to implement a bifurcated equipment regulatory approach, under which different rate regulatory standards govern basic and non-basic service-related equipment, is further evidenced by an examination of Section 3(b)(3)(A) which specifies the two types of equipment that must be priced as basic equipment (i.e., based on actual cost): (1) equipment "used by subscribers to receive the basic service tier" and (2) "such addressable converter box or other equipment as is required" for a basic-only subscriber to receive programming on a per channel or per program basis pursuant to Section 3(b)(8) of the 1992 Cable Act (i.e., without being required to "buy through" intermediate service tiers).<sup>10</sup> If Congress intended all equipment to be priced based on actual cost, there would have been no need to specify in Section 3(b)(3)(A) that rates applicable to descrambling equipment used to receive pay services by a basic-only subscriber should be reviewed on the basis of actual cost, because such

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<sup>10</sup> 1992 Cable Act § 3(b)(3)(A). 47 U.S.C. 543(b)(3)(A).

equipment would already have been included under the actual-cost standard. Rather, Congress must have intended that equipment used to receive premium service as well as basic service need not be evaluated on the basis of actual cost, except in the limited situation of a basic subscriber receiving pay services without an intervening cable programming services tier. There is simply no other logical way to read the foregoing provisions of the 1992 Cable Act.

Finally, in the face of the 1992 Cable Act's preference for competition<sup>11</sup> and its overriding objective to engender competitive pricing, the Commission's notion that such competitive pricing will be achievable through comprehensive rate regulation of equipment, regardless of the equipment's level of functionality or the status of competitive offerings in the marketplace, is utterly misdirected.

Accordingly, to comport with Congressional intent, the Commission should modify rule 76.923 adopted by the Rate Order by deleting the phrase "regardless of whether such equipment is additionally used to receive other tiers of regulated programming service and/or unregulated service." In addition, for the reasons discussed in Section II, the Commission should exempt from rate regulation the types of advanced, handheld remote controls and computerized, set-top boxes which GI describes below. At the very least, the Commission must modify its equipment regulatory scheme by applying the actual-cost standard

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<sup>11</sup> Id. § 3(a)(2), 47 U.S.C. 543(a)(2).

only to equipment used solely to receive basic tier service and equipment required to satisfy Section 3(b)(8)'s anti buy-through prohibition.

II. THE COMMISSION'S COMPREHENSIVE EQUIPMENT REGULATORY  
SCHEME CONTRAVENES PRINCIPLES OF SOUND PUBLIC POLICY  
AND ECONOMIC EFFICIENCY

A. The Commission's Equipment Scheme Will Stifle The  
Technological Dynamism of the Cable Industry

Within the Commission's pervasive equipment regulatory scheme lies the significant danger that the Commission could end up stifling the technological dynamism of the cable industry and inadvertently dictating issues of systems architecture and technology selection. This is a danger the Commission should go to great lengths to avoid.

The cable industry is poised to become an "information superhighway," providing a host of computer-based, interactive, multimedia services as well as new video programming services. The multimedia services demonstrated at the recent NCTA convention included interactive program guides, shopping services, game channels, and user-controlled news and sports programming. Many of these services consist of new vertical service capabilities that are enhancements to existing programming channels, such as the ability to order tickets while watching a baseball game.

These new vertical services are made possible by the capabilities of advanced, handheld remote controls and computerized set-top boxes that were not envisioned by the

Congress when the 1992 Cable Act was enacted. For example, with a "click" of the handheld remote "mouse," a spreadsheet is displayed on the screen that lists the current programs on other channels or the following programs on that channel. A small, full-motion "picture-in-text" window shows one of the current programs. Clicking with the mouse allows the viewer to "channel surf" through the programs in the small window while keeping the channel guide spreadsheet also on display. With additional clicks, the viewer can change the spreadsheet display to show only news programs or only sports programs or only movies.

The viewer can then select a sports program and even activate a ticket-ordering process. The ball game shrinks into a window and the screen displays a schedule of future games. Next, it displays a layout of the stadium so that a specific seating section can be selected. Another click and the tickets are ordered.

Alternatively, the viewer might select a music video program channel. Then, with a few clicks of the handheld remote, the viewer can order the CD that is being performed or other CDs by the same performer.

The advanced, handheld remotes that control these interactive services contain capabilities far beyond basic channel-changing functionality. For example, "The Maestro," a universal remote control, is supplied with Digital Cable Radio

("DCR"), an unregulated digital audio service.<sup>12</sup> In addition to changing "channels" on DCR's audio program services, The Maestro controls stereo systems, CD players, TVs, VCRs, satellite receivers, laser disc players, and cable TV converters. Thus, it competes against unregulated remote controls that are widely sold to the general public.

The Maestro is also an information display. It displays the DCR channel's name and number, the song title, artist, CD or album title, and record label. It can also store and display sports scores, financial tickers, and news headlines. The Maestro contains its own alphanumeric display panel, but it can also be used to control on-screen television displays. Thus, it is apparent that The Maestro is a vertical service with capabilities far beyond that of the simplest handheld remote and one which cable subscribers may highly value. But as part of a new service, it involves risky investment by cable operators -- investment that is substantially greater than that needed for simple remote controls. DCR sells The Maestro to cable operators for \$45, while the simplest remotes that control only the cable set-top converter are sold for as little as \$6 to \$10. The riskiness of deploying the Maestro will be further compounded by the Commission's comprehensive equipment regulatory scheme, under which it appears the Maestro would be subject to the actual-cost standard.

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<sup>12</sup> GI, a partner in DCR, is the designer and manufacturer of The Maestro.

By subjecting all equipment "used to receive basic tier service" to cost-based regulation, the Commission risks seriously skewing cable operator incentives to invest capital in the research and development of the types of innovative and highly valued equipment and services described above. Industry pundits can prophesy about the emergence of 500-channel cable systems.

prospect of cost-based regulation of advanced digital decompressors might very well opt instead to implement less efficient, higher bandwidth analog systems rather than digital video compression, because digital video compression requires greater investment in heavily regulated subscriber equipment, whereas decompressors and/or bandwidth require increased investment

substantially curtailed, the Commission will have succeeded in generating the very inefficiencies which the Congressional scheme was designed to avert.

By erecting as the linchpin of cost-based equipment regulation the mere fact that a piece of equipment is used in some way to receive basic tier service -- no matter how minimally or at what insignificant incremental cost -- the Commission's comprehensive equipment regulatory scheme actually penalizes cable operators for using fully integrated, highly efficient equipment.<sup>14</sup> This is an illogical sanction, indeed. It is akin to telling a software program vendor such as Lotus Corp. that if any future version of the "Lotus 123" spreadsheet program contains the slightest bit of backward compatibility with older versions of the Lotus 123 program, then the price Lotus Corp. could charge for the newer, more advanced version would be significantly circumscribed. Faced with such a restriction, what might, in fact, result could be the artificial segmentation of the Lotus product into many disparate and wholly incompatible versions that would benefit neither Lotus Corp. nor its customers.

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<sup>14</sup> While the advanced set-top boxes and remotes GI described above are capable of being used simultaneously to receive basic service tier programming, basic tier reception is wholly ancillary to the equipment's primary functionality. In designing a computerized, multimedia set-top box, for example, the additional cost of the tuner that constitutes the basic cable converter is small. Likewise, in designing a universal handheld remote control with a display panel, the additional cost to control a cable converter is negligible.



Similarly inefficient results could very well arise here if the Commission fails to mollify its harsh and overly broad equipment regulatory approach. As discussed in Section A, supra, the Commission's equipment approach may cause cable operators to sharply limit or wholly abandon technological ventures which they otherwise would have pursued. In addition, the Commission's comprehensive scheme may create incentives for the development of discrete set-top devices that artificially segregate the performance of regulated and unregulated functions. Vendors may begin to develop low-level converters which do nothing more than "receive basic tier service," on the one hand, and more advanced boxes that have nothing to do with the basic service tier but which deliver additional functionality, on the other, in order to minimize the level of functionality subject to the actual-cost standard. In the end, however, such an approach would be economically inefficient. Like the hypothetically disparate and incompatible Lotus 123 versions, these discrete set-top devices would add unnecessary costs (e.g., for separate chassis, power supplies, and connectors), without generating any commensurate increases in functionality over highly efficient, fully integrated set-top boxes.<sup>15</sup>

Moreover, the Commission's equipment regulatory approach might result in certain subscribers covering substantial parts of other subscribers' costs for improved functionality. For

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<sup>15</sup> Such a proliferation of discrete set-top boxes also has the potential for aggravating the consumer interface problem that gave rise to Section 17 of the 1992 Cable Act.

example, a cable operator may be compelled to offer one, all-inclusive set-top box which it requires all subscribers to use, regardless of the disparate levels of functionality desired by individual subscribers, thereby forcing those subscribers who do not use the box's unwanted features to cover part of the costs of those who do use them. In addition, under the Commission's equipment approach, cable operators will have greater incentives to allocate their resources to more potentially lucrative, unregulated products and services and away from those equipment options which subscribers may value most highly yet which are saddled with cost-based pricing constraints.<sup>16</sup> It is hardly surprising, for example, given the Commission's comprehensive rate regulation scheme, that cable operators have recently expressed a greater willingness to carry programming on an unregulated, "al la carte" basis rather than as part of a regulated tier.<sup>17</sup>

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<sup>16</sup> For a fuller description of these highly valued equipment options, see, e.g., Reply Comments of General Instrument Corporation in ET Docket No. 93-7, April 21, 1993. These equipment options include converters that display on-screen channel guides and support picture-in-picture and easier recording of programs. For example, GI's "Watch'n'Record" converters include two tuners and thereby support picture-in-picture and the ability to watch one scrambled pay-per-channel program while recording a second scrambled program. Such products that contain "IR blasters" allow the subscriber to set the converter to control the clock-setting and recording operations of the VCR, so that the complexities of VCR operations may be simplified.

<sup>17</sup> See Broadcasting & Cable Magazine, June 14, 1993, at 11.

Cable operators should not be so forced to adopt inefficient product and pricing strategies to compensate for the enervating effects of the Commission's equipment regulatory approach, especially since this approach will do little in the way of promoting consumer welfare. Such distortions of free-market pricing is recognized as one of the major public policy deficiencies of rate regulation. In the same way that the subsidies from long distance to local telephone service retarded the usage and growth of long distance telephone service, subsidies from (for example) pay-per-view cable service to equipment can be expected to retard the usage and growth of pay-per-view (or pay-per-listen, in the case of digital audio) service.<sup>18</sup>

Finally, the foregoing inefficiencies will be exacerbated still further by the fact that much of the new, advanced cable terminal equipment will combine aspects of both network and customer premises equipment, thereby engendering potentially contentious network demarcation and cost allocation issues. By imposing a comprehensive regulatory scheme on equipment that will perform both network and customer functions, such as the new digital decompressors, the Commission introduces an added level of complexity and inefficiency into the equation. The Commission

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<sup>18</sup> In the specific case of The Maestro handheld remote control for Digital Cable Radio service, discussed in detail above, there are complex licensing agreements covering performance of the recorded music that result in revenue-sharing of service revenues, but not equipment revenues, with music licensors. In this case, such shifting of revenues from equipment to service is particularly inappropriate.

is all too familiar with the definitional quandaries which inhere in attempts to determine "where the network ends and the customer premise begins?" for equipment regulatory purposes. The Commission's history of grappling with this line-drawing conundrum in the telco equipment arena -- where NCTE is treated as unregulated CPE,<sup>19</sup> albeit with a minor exception for "multiplexers"<sup>20</sup> -- clearly suggests the undesirability of visiting rigorous regulatory price controls on such functionally diverse, highly integrated equipment.<sup>21</sup> Further, the conflicts between the Commission's essentially deregulatory NCTE/multiplexer scheme and its comprehensive cable equipment

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<sup>19</sup> NCTE is a generic term for devices located on customer premises that provide an interface between the network and terminal equipment and perform functions that support digital communications. Amendment of Part 68 of the Commission's Rules, 94 FCC 2d 5 (1983), recon. denied, FCC 84-145 (released April 27, 1984).

<sup>20</sup> The "multiplexer exception" permits carrier provision of multiplexers on customer premises as part of a regulated service in order to facilitate provision of tariffed basic service offerings of (a) two or more communications channels to a single customer, or (b) individual channels to two or more customers. Amendment of Sections 64.702 of the Commission's Rules, Phase II Report and Order, 2 F.C.C. Rcd 3072, 3105-06 (1987), recon. denied, 3 F.C.C. Rcd 1150 (1988). In its LADT Order, the Commission clarified the multiplexer exception by finding devices such as data subscriber line carriers (DSLCS) located on customer premises that perform multiplexing as well as functions performed by NCTE and modems should be treated as unregulated CPE. IBM, Memorandum Opinion and Order, 58 Rad. Reg. 2d (P&F) 374 (1985).

<sup>21</sup> See Through the Looking Glass: Integrated Broadband Networks, Regulatory Policies, and Institutional Change, OPP Working Paper No. 24, 4 F.C.C. Rcd 1306, 1313 (1988) (pointing up that fiber optic networks and accompanying equipment present major definitional and cost allocation issues under the Commission's NCTE rules due to the overlapping network/CPE functionality inherent in fiber transmission facilities).

regulatory scheme may introduce yet another level of complexity when the Commission is faced with the application of its rules to advanced terminal equipment that combines both voice and video functionality.<sup>22</sup> In short, rather than promoting the optimization of functionality and widespread deployment of cable terminal equipment, the Commission's comprehensive equipment regulatory scheme introduces untold complexities contrary to Congressional intent and consumer welfare.

The more principled approach and one more consonant with the statute and the public interest is for the Commission to limit its regulation of equipment to that which Congress specifically required under Section 3(b)(3) and to afford cable operators maximum flexibility in their pricing strategies of advanced equipment and related services. Given the overall thrust of the 1992 Cable Act to establish a fully competitive cable marketplace and the specific statutory provisions designed to achieve this result,<sup>23</sup> cable operators will have substantial incentives to deploy their advanced set-top boxes and handheld remotes on a wide scale in order to compete effectively with the various

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<sup>22</sup> For example, GI has developed and demonstrated a handheld TV channel controller that is also a cordless telephone. See Experimental License KB2XEC, File No. S-0288-EX-90. This device, when used as a cordless telephone, automatically mutes the audio of the television. The cordless telephone base station is incorporated into the cable converter. In this case, it would appear that the Commission's cable rate regulation policies will result in the rate regulation of heretofore unregulated telephone CPE.

<sup>23</sup> See, e.g., 1992 Cable Act § 628, 47 U.S.C. § 548 (Program Access Section).

innovative service offerings of alternative distributors. The major flaw in the Commission's equipment regulatory approach is

pricing strategies for this advanced equipment in order to ensure the efficient and widespread deployment of innovative technologies and new services. Overregulation of the rates for the essential components of these new services ignores the fundamental interdependence of cable terminal equipment and cable services and, as such, will both discourage cable operators from developing these new technologies and encourage inefficient equipment designs and deployment strategies. Congress never intended that the growth of these new technologies and advanced services be impaired in this manner.

At the very least, the Commission must modify its rules to comport with Congressional intent by exempting from cost-based regulation all equipment except equipment that is used solely to receive the basic service tier and that which is required to satisfy Section 3(b)(8)'s anti buy-through prohibition.

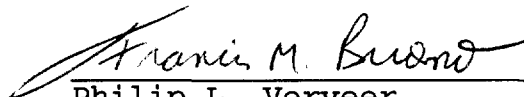
Respectfully submitted,

GENERAL INSTRUMENT CORPORATION

Quincy Rodgers  
Associate General Counsel  
General Instrument Corporation  
1899 L Street, N.W., 5th Floor  
Washington, D.C. 20036

Jeffrey Krauss  
Consultant  
17 West Jefferson Street  
Suite 106  
Rockville, M.D. 20850

Of Counsel



Philip L. Verveer  
Francis M. Buono

Willkie Farr & Gallagher  
Three Lafayette Centre  
1155 21st Street, N.W.  
Suite 600  
Washington, D.C. 20036-3384

Its Attorneys

July 21, 1993

**CERTIFICATE OF SERVICE**

I, Francis M. Buono, do hereby certify that on July 21, 1993, copies of the foregoing "Comments of General Instrument Corporation in Support of Petitions for Reconsideration and/or Clarification" were served by First Class Mail, postage prepaid on the following:

Sue D. Blumenfeld  
Willkie Farr & Gallagher  
Suite 600  
1155-21st Street, N.W.  
Washington, DC 20036

Eric E. Breisach  
Howard & Howard Attorneys, P.C.  
107 W. Michigan Avenue  
Suite 400  
Kalamazoo, Michigan 49007

Daniel L. Brenner  
National Cable Television  
Association  
1724 Massachusetts Avenue, N.W.  
Washington, DC 20036

Stephen R. Effros  
President  
Community Antenna Television  
Association, Inc.  
3950 Chain Bridge Road  
Fairfax, VA 22030

Trudi McCollum Foushee  
Crown Media, Inc.  
One Galleria Tower  
13355 Noel Road, Suite 1650  
Dallas, TX 75240

Brenda L. Fox  
Dow Lohnes & Albertson  
1255 23rd Street, N.W.  
Washington, DC 20037

Kathleen L. Franco  
Arent Fox Kintner Plotkin & Kahn  
1050 Connecticut Avenue, N.W.  
Washington, DC 20036

Gardner F. Gillespie  
Jacqueline P. Cleary  
Hogan & Hartson  
555-13th Street, N.W.  
Washington, DC 20004-1109

Michael E. Glover  
1710 H Street, N.W.  
Washington, DC 20006

David B. Gluck  
600 Las Colinas Boulevard  
Suite 2200  
Irving, TX 75039

Philip R. Hochberg  
Mark J. Palchick  
James E. Meyers  
Baraff Koerner Olender &  
Hochberg, P.C.  
5335 Wisconsin Avenue, N.W.  
Suite 300  
Washington, DC 20015

Robert L. Hoegle  
Timothy J. Fitzgibbon  
Carter, Ledyard & Milburn  
1150 I Street, N.W.  
Suite 870  
Washington, DC 20005



J. Bruce Irving  
Bailey, Hunt, Jones & Busto  
Courvoisier Centre, Suite 300  
501 Brickell Key Drive  
Miami, FL 33131-2623

Spencer R. Kaitz  
California Cable TV Association  
4341 Piedmont Avenue  
Oakland, CA 94611

Ron D. Katznelson  
Multichannel Communication  
Sciences, Inc.  
5910 Pacific Center Blvd.  
San Diego, CA 92121

Diane S. Killory  
Joan E. Neal  
Morrison & Foerster  
2000 Pennsylvania Ave., NW  
Suite 5500  
Washington, DC 20036

Matthew L. Leibowitz  
Leibowitz & Spencer  
One S.E. Third Avenue  
Suite 1450  
Miami, FL 33131

William Leventer  
Video Data Systems  
653 Old Willets Path  
Hauppauge, NY 11788

Robert Nagel  
Alaska Cablevision, Inc.  
5808 Lake Washington Boulevard  
Suite 400  
Kirkland, WA 98033

Judith L. Neustadter  
2200 Main Street, Suite 611  
P. O. Box 2252  
Wailuku, Maui, Hawaii 96793

Jerry Parker  
Director of Marketing  
Superstar Connection  
3801 S. Sheridan Road  
Tulsa, OK 74145

James A. Penney  
Northland Communications  
Corporation  
1201 Third Avenue  
Suite 3600  
Seattle, WA 98101

John W. Pestle  
Varnum, Riddering, Schmidt &  
Howlett  
333 Bridge Street, N.W.  
P.O. Box 352  
Grand Rapids, MI 49501-0352

Mark D. Ramey  
Provo Cable Co.  
1013 East 590 South  
Orem, Utah 84058

Thomas L. Robak  
Apollo CableVision  
13100 Alondra Boulevard  
Suite 104  
Cerritos, CA 90701

Peter D. Ross, Esq.  
Donna K. Gregg  
John I. Davis  
Wiley, Rein & Fielding  
1776 K Street, N.W.  
Washington, DC 20006

Stephen R. Ross  
Ross & Hardies  
888 16th Street, N.W.  
3rd Floor  
Washington, DC 20006

Robert J. Sachs  
Senior Vice President  
Continental Cablevision  
Pilot House  
Lewis Wharf  
Boston, MA 02110

Gregory M. Schmidt  
Alane C. Weixel  
Covington & Burling  
1201 Pennsylvania Avenue, N.W.  
Washington, DC 20044